

CLAIMS

1. Method for carrying out in continuous, under so-called pseudo-isothermal conditions and in a predetermined reaction environment, such as a catalytic bed, a selected
5 chemical reaction, comprising the steps of providing in said reaction environment at least one tubular heat exchanger fed with a first flow of a heat exchange operating fluid at a respective predetermined inlet temperature, said fluid passing through said at least one
10 tubular heat exchanger according to a respective inlet/outlet path, which method is characterized by feeding into said at least one tubular heat exchanger and at one or more intermediate positions of said path, a second flow of operating fluid having a respective predetermined inlet
15 temperature.

2. Heat exchanger for the method according to claim 1, comprising a tubular element (12), a chamber (16) defined within said tubular element (12) and intended for being passed through by a first flow of a heat exchange operating
20 fluid, a fluid distributor duct (8) and a fluid collector duct (9) connected to said tubular element (12) and in fluid communication with said chamber (16), characterized in that it further comprises an additional distributor (17) of a second flow of said operating fluid in fluid
25 communication with said chamber (16) and a feeding duct (18) of said second flow of operating fluid in fluid communication with said additional distributor (17).

3. Heat exchanger according to claim 2, characterized in that said additional distributor (17) is supported within
30 said tubular element (12) and is provided with a least a hole (19) in fluid communication with said chamber (16) at a predetermined distance between said fluid distributor duct (8) and said fluid collector duct (9).

4. Heat exchanger according to claim 3, characterized in

that said additional distributor (17) is tubular shaped, closed at one end thereof and connected to said feeding duct (18) at an opposite end thereof.

5 5. Heat exchanger according to claim 4, characterized in that said feeding duct (18) is supported within said fluid distributor duct (8) or said fluid collector duct (9).

10 6. Heat exchanger according to claim 3, characterized in that said additional distributor (17) extends for substantially the entire length of said tubular exchanger (12).

15 7. Heat exchanger according to claim 3, characterized in that said additional distributor (17) is provided with a plurality of said holes (19) arranged in rows at respective predetermined distances between said fluid distributor duct (8) and said fluid collector duct (9).

8. Heat exchanger according to claim 4, characterized in that the diameter of said additional distributor (17) varies along its length.

20 9. Heat exchange unit for pseudo-isothermal reactors, comprising at least one tubular heat exchanger according to claim 2.